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RESEARCH CENTER FOR ASSISTIVE INFORMATION AND COMMUNICATION SOLUTIONS – AICOS

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PROJECT SPEC SHEET (EN)

DEUS EX MACHINA | SYMBIOTIC TECHNOLOGY FOR SOCIETAL EFFICIENCY GAINS

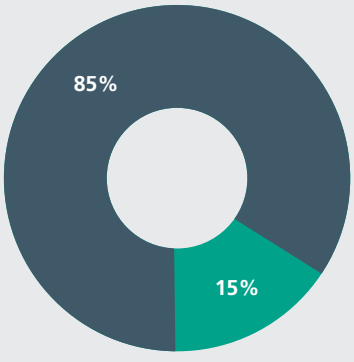
Project no:
NORTE-01-0145-FEDER-000026

Supported by: NORTE-45-2015-02 - Sistema De Apoio à Investigação Científica e Tecnológica – "Projetos Estruturados de I&D&I"

Partners: Associação Fraunhofer Portugal Research, Universidade do Minho, Universidade do Porto, Universidade de Trás dos Montes e Alto Douro

Start date: 02-01-2016
Conclusion date: 31-12-2018

Total eligible cost: 2.600.513,47€
EU Funding: 2.210.436,45€



- **COPROMOTORS FUNDING**
- **EU FUNDING**

Project summary

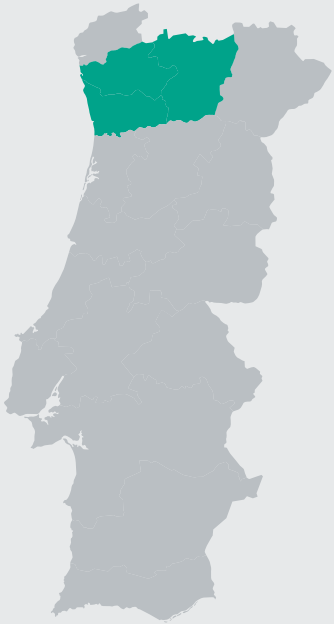
When thought of at a distance, many of today's societal challenges stem from waste, inadequate use of resources, lack of integrated solutions and effort replication. All of these are leading not only to citizens being unable to maintain their living standards, but most importantly, to what some academics call *defuturing*.

Facing this challenge, societies demand more from less for more, seemingly unsolvable, but which appears to be the point in ancient Greek drama, when such an impenetrable problem is suddenly disentangled by a new element coming onto the play: the 'Deus ex Machina'.

Societies are striving for these new elements towards efficiency gains mediated by a symbiotic relationship of humans with technology.

We need elements such as these, which are able to deal with complex problems and, at the same time, be transparent to the users, as 'companions' who assist in difficult, unknown or just prosaic tasks.

We have devised a robust proposal to begin tackling these challenges. It consists of two research lines, being one built on top of the other. The first one will research and create building blocks – from tangible to intangible elements –, while the second will put these building blocks at the service of pressing societal needs in European and African countries.



Portugal | Braga, Porto, Vila Real

EITCC – 'Eyes of the Internet of Things' Competence Centre

This research line will concentrate on the aspects to understand the environment, the user, his/her context and actions, and is serving as a technological base to all target domains in the other research line (C3). Four work packages build the EITCC:

1. Sensing and actuating. Bringing novel sensing mechanisms and actuation by accessing existing devices and developing new IoT sensing sources.

2. Local information fusion. Research on data aggregation algorithms to create refined and contextual information obtained in multiple local sensing devices.

3. Remote information fusion, big data analytics in the cloud and AI. Implement information fusion from multiple distributed sensors, historical and contextual information to provide higher level of abstraction to C3.

4. Networks for ICT4D. Development of solutions for ad-hoc broadband networks for remote locations in developing countries.

C3 – Companion Competence Centre

Using the tools emerging from EITCC, C3 will study relevant societal challenges within scientific domains in relation to humans in order to design 'companions', which are non-intrusive, assistive tools for everyday life in the following domains:

1. Mind and behaviour. Researching human interaction with computers, with a particular focus on human dignity, ethics, perception, cognition, communication and cultural aspects.

2. Health and well-being. Researching solutions for patient empowerment, reducing burden in public health care and streamlining the path to full digitally supported health.

3. Nutrition. Understanding what people eat, why they eat it, and how healthier and more sustainable behaviours could be encouraged towards gains in health and reduction of food waste.

4. Agriculture. Considering applications suitable to developed and developing regions towards sustainability and efficiency gains by introducing precision agriculture.

5. Activity monitoring. Understanding the users, their activities, context and behaviour, and providing tailored recommendations and tools that will be useful for tackling the challenges of coping with ageing and health conditions, preventing diseases by keeping an active and healthy lifestyle, improving the performance of sports athletes and increasing public safety and security.

6. Community tools and social inclusion. Developing inclusive tools, which make use of crowd-sourcing and data mining concepts, focused on citizen empowerment, participatory monitoring, urban service delivery, and social equity.

Photos, videos and other dissemination materials